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OF

NATURAL HISTORY,

AND

JOURNAL FOR RECORDING FACTS AND ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, MOLLUSKS,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

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The Badger: its period of Gestation.

It were much to be wished that some competent observer, who, like Gilbert White, should be totally uninfluenced by the desire to make a book, would devote his time and attention to the life-histories of our British sucklers. I scarcely know of any field of inquiry in which so rich a harvest of facts is to be reaped. As subjects for especial interest, I need only allude to three,—torpidity, food and period of gestation,—in order to show how little is known. We find it repeatedly asserted that the badger is a cleanly animal, emitting a disgusting odour, living under ground, baited by dogs, and given to somnolency; but we are left to conjecture whether the existence of these peculiarities has really been observed and confirmed; or whether, in our veneration for ancestral lore, we have transferred them from book to book, without taking the trouble to ascertain if they are facts or fictions.

These thoughts have often disturbed my peace of mind. I have repeatedly asked myself whether Natural History is to remain a science of book-making, or whether we are to elevate it to a science of observation. Is it not possible to effect the latter? Does not the continuous demand for new editions of the "Selbourne" clearly demonstrate that the demand for fact is quite equal to the supply? Can the best of compilations on Natural History boast a like demand? Say, for instance, Bingley's 'Quadrupeds' or Bell's 'Quadrupeds.' Both these have, in addition to the vast erudition they display, the immense advantage over White of admirable illustrations, yet we have no second, much less any fortieth or fiftieth, edition of these volumes. We naturalists complain bitterly of want of patronage; we form joint-stock companies for the purpose of bringing out our compilations; and why? simply because we know they will not sell: so we appeal to the affluent to take pity on our incompetence, to gratify our self-esteem. No man would beg a joint-stock company to publish his book if he had any faith in there being a remunerative sale for it. It is the real experimental knowledge that these heavy compilations are invariably still-born that compels a man to sue *in formâ pauperis.* He grows old and wears out in his search for a *patriotic* publisher, who will take the risk, and in sheer despair offers his compilation to a joint-stock company, the result of whose patronage will, after all, be to bury his labours in oblivion, for against the public, the real consumer of intellectual wares, the publications of a publishing company are hermetically sealed.

These remarks arise naturelly enough out of that particular inquiry which I have selected as a title for this paper; it is one to which my attention has been repeatedly called by the following paragraphs selected from the 'Field' newspaper. Have we really no observers capable of solving so simple a problem? Must we ever rely on what "An Old Bushman" calls "general opinion"? The modification "general opinion *here*" leaves the context equally vague. Would he himself be satisfied thus entirely to ignore the foundation of all Science, observation?

I appeal to the readers of the 'Zoologist': not merely to every principal town, but to every village, to every hamlet, whither the 'Zoologist' wends its way: surely it is not too much to expect that, amid such a host of readers, some scraps of reliable information may be gathered, and, when gathered, preserved in these pages for the use of naturalists yet unborn.

Edward Newman.

Period of Gestation of the Badger.—Being an old sportsman, and a constant reader of the 'Field,' I take considerable interest in your columns on Natural History; and as I have had pretty good opportunities of watching the badger, I propose to give you the result of my observations, hoping that by so doing I may induce some more learned man than myself to explain its habits, food, time of gestation, &c. About the year 1831, as I was looking after the game in Weston Wood, about four miles from Leamington, I footed a badger over a sand-hill full of rabbit-holes, and tracked it into a hole. I put a terrier in after it, and as I heard a hot engagement going on between the badger and the dog, I set to work to dig them out. After bagging the badger, I took it to Weston Hall and turned it loose into a perfectly secure hot-house. The badger lived there on rabbits, meat, milk and water for thirteen months, and then one morning we found her suckling one young one. Of the performances of this young one I can give you several anecdotes in a future letter, if you wish it, as it was raised by hand in a farm-house, and shared the hearth-rug with some pet dogs. I much regret that I am not able, at this distance of time, to say what month the badger was caught in and what month she whelped, as I made no memorandum of it at the time. But I am quite sure she was confined in a perfectly secure place for thirteen months before she dropped her cub. If a badger could have got into her place she could have got out; therefore I am anxious to know what is the period of a badger's gestation. It is just possible she might have been in the family way some time before she was caught. I think it is not generally known that the badger delights as much in devouring a wasp's nest as a bear delights in robbing a bee-hive. I have footed many a badger up to a wasps' nest, and have seen the hole he has scratched to get at it. A few yards off I have noticed where he sat down to eat his buttered toast. Are their skins proof against the venomous sting of a wasp?—*Frederick Heycock; Bedford.*

[As far as we are aware there is no authentic account of the period of the badger's gestation. Several instances are on record of badgers having produced young in confinement, but when the young were begotten no one could tell. In the 'Field' of April 6, 1861, Mr. Henry Shaw, of High Street, Shrewsbury, gives an account of a fact very similar to that now reported by Mr. Heycock. It was as follows:—"A badger which has been in confinement since April 3, 1860, at Haughton Hall, Salop, brought forth on April 12, 1861, two young ones alive, which appear scarcely to have arrived at maturity; unfortunately, both have died since. The badger was taken in Cornwall, and sent per rail to the above place in a box, since which time she has been confined in a place where nothing could by possibility get at her." In reply to Mr. Shaw's question as to the ordinary time of gestation, "An Old Bushman" stated in the 'Field' of May 11, 1861, that "the female goes with young never longer than ten weeks;" but the only evidence he gives is that the male and female come together early in November, and new-born young are found at the end of February (which really amounts to some thirteen or fourteen weeks). This fact, however, would be as compatible with gestation lasting about fifteen months as with its lasting only three months, unless there were some means of identifying the individuals, which we do not see could be effected with certainty by any other means than by keeping them in confinement. Have any other of our readers evidence to offer? and have female badgers containing young been killed during the summer months? which would not be likely to be the case if "An Old Bushman's" statement be correct.—*Ed. of 'Field.'*]

Period of Gestation of the Badger.—In answer to Mr. Heycock's inquiries about the period of gestation of the badger, I dug out a male and female badger from a small earth last year in the month of April. I kept the female until the end of June, when she died. On opening her I found three young ones distinctly developed; so that the mother must have gone the greatest part of her time in young. These badgers had deserted a very large and strong earth, although it had not been disturbed, and had taken up their quarters about half a mile off, in what seemed to be merely an enlarged rabbit-hole. I have often heard of the great age a badger lives to; is there any good evidence of this? —*S. E. S.; Christ Church, Oxford.*

[Our correspondent's expression, "distinctly developed," is far from clear, and might apply to the condition of the fœtus at a very early period. All that his statement goes to prove is that in this instance the badger would have brought forth young after the month of June, and more than two months after being rigidly confined. There are two questions in dispute: *first*, what is the period of gestation in the badger, to which this case does not apply; and, *secondly*, what is the usual month of their bringing forth young, which it settles, as far as one case can, that it is not February, unless gestation lasts more than twelve months.—*Ed. of 'Field.'*]

Period of Gestation of the Badger.—I have observed your editorial remarks on this subject in your impression of June 25th, and your reference to my note of May 11, 1861. I certainly expressed myself loosely. I ought to have said "the general opinion here" is that the badger does not go with young longer than ten weeks, for I cannot prove, from personal observation, at exactly what season the male and female come together; but the idea of all the foresters round about where the badger is common is that the pairing takes place just before they lay up for the winter, and I have myself seen young ones (very small, but they might, however, have been three weeks old) dug out early in March. As to the two instances of the badger bringing forth in confinement, when she has been totally excluded from the male for a period of thirteen months, mentioned in your paper, I can offer no opinion. We must either come to the conclusion that the badger goes longer with young than, I believe, any other known animal, or that they are able to bring forth without an actual connection with the male,—which idea no one, of course, can entertain for a moment,—or that there is some mistake in the matter, which is hardly likely either. Surely one or other of those gentlemen who had the female badger in confinement, must have remarked how long the female had been in confinement before she began to show symptoms of being heavy, and this might lead us to some conclusion. But it is still my opinion that, like its nearest generic congener, the bear, the Swedish badger brings forth once every year, in early spring, in her earth; and that, like the bear, the connection takes place during the summer or autumn (the general opinion is, just before they lay up for winter). Moreover, I never heard of a single instance of a female badger being killed at any time in the summer heavy with young, and I have asked this very question of many woodmen and hunters here; and if the period of gestation extends over a period of upwards of thirteen months, this must surely have occasionally happened. Till this is proved I shall certainly adhere to my original opinion, as above stated, notwithstanding your remark that the fact of the new-born young being found in the end of February is as compatible with the period of gestation lasting fifteen months as with its lasting only three; for I have better evidence to prove that this is the case generally with the female badger here, than I fancy you can adduce to show that their period of gestation extends over fifteen months. I will ask you this question, Do you know of any mammal in which the period of gestation lasts fifteen months? I do not; but of course there are many of whose habits I know nothing; but I believe, although that may be very different, it is the nature of every mammal of which I know anything, except perhaps in cases of accident, to bring forth at least once within every twelve months, as long as they are capable of breeding. It is strange that I am unable to find in any Natural History book to which I have access, a good account of the breeding habits of so common an animal as the badger. Since writing the above I have found an excellent treatise on the habits and the chase of the badger, by the late Pastor Ekstrom, not only one of the keenest sportsmen of his day in Sweden, but an excellent naturalist. Among many other interesting remarks on the natural history of the badger, he says: "In the middle of Sweden the winter sleep of the badger lasts generally from the middle of November to the middle of March, dependent upon the season. That this winter sleep is not deep is proved by the fact that if a long thaw sets in they will leave their earths and come out to seek for their food." (This I can corroborate to the letter). "The badger lives in a state of monogamy, but the male and female are seldom seen together except about the pairing time, and then not often. We fancy that the male seeks the female in her earth, and that she drives the male away after the union. It is hardly fully agreed at what time this takes place. Some few fancy in the spring; but others, and by far the most, say that it is in November, or late in the autumn" (and I never heard any other opinion up in Wermland). "This appears more probable, for it is only at this season that the male and female are commonly seen together. The young are born in spring. The young badger which now lies before me was killed on June 20; it is fifteen inches long, and the milk-teeth are still remaining, which leads me to believe that it was born about the end of February. The female goes with young nine or ten weeks" (and I never have heard this point disputed), "and brings forth three to five young, which are blind for nine days. These she suckles for about three weeks, and after that they follow her through the whole summer. It is supposed that they do not attain their full size until they are two years old." The only mystery which I ever heard attached to the breeding habits of the badger here is that I never can meet with anyone who can prove as an eye-witness when the union takes place; and this is not wonderful, if, as Ekstrom says, it occurs under-ground. Every forester in Wermland with whom I have spoken on the subject, says distinctly that the pairing takes place when the old female seeks her winter quarters in the autumn. This is the only time, they say, that the male and female are seen together. If a male is killed in the summer he is always alone, and, during that season, you invariably see the old female in the forests attended by her cubs. Moreover, an instance has never been recorded here of a female badger heavy with young having been killed either in the summer or the autumn. As to the idea of their being thirteen or fifteen months with young, all our naturalists ridicule it. Is it not just possible that the two female badgers mentioned in your paper had by some means or other allured the old males to their places of confinement? It may appear impossible that such would be the case, but many things are considered to have been impossible till they are thoroughly investigated; and when men state any very extraordinary facts in Natural History, such as the present, it is a great pity they do not give us every particular. You have a Zoological Gardens in London, where the habits of almost any animal can be observed almost as freely as in a state of nature. How easily many doubts respecting their breeding and other habits could be cleared up if only the authorities and keepers of the Gardens would trouble themselves to make observations. Here is a point in dispute, which could be easily set at rest in a place nearly as well adapted for studying the habits of smaller animals as in a state of freedom.—*An Old Bushman; Sweden.*

[When the first instance was mentioned of a badger producing young after it had lived in seclusion for thirteen months, we thought, with "An Old Bushman," that there was some mistake, which, however, can hardly be explained by the supposition that the female had allured a male, for, as was remarked a few weeks since, if there were means of ingress and egress for the one, there would be opportunity of escape for the other, which undoubtedly would have been taken advantage of. When a second instance was recorded, we thought it desirable to draw out further evidence, if possible, and accordingly added the note to which our correspondent refers. Since he wrote he doubtless will have received the 'Field' of July 9, containing an account of what he says he has never heard a single instance of, namely, a badger containing young in the summer months. We have also, in the letter of Mr. Allies (published below), two other instances of gestation extending over a very long period. The evidence sent us now amounts to three female badgers having produced young after being kept apart from the other sex more than twelve months; a fourth where the separation had lasted ten months; and a fifth which died at the end of June, and was found to contain young. We shall be glad of any further evidence tending to clear up the mystery. "An Old Bushman" asks, "Do you know of any mammal in which the period of gestation lasts fifteen months?" Of our own knowledge we do not; but it is said that gestation in the elephant lasts twenty months.—*Ed. of 'Field.'*]

Period of Gestation of the Badger.—In answer to the question, "What is the time of gestation with the badger?" I send you the following facts:—Some twenty years ago Mr. Joseph Thomas, head ostler of the Bell Hotel, Broad Street, Worcester, bought a female badger for baiting with dogs. She was constantly subject to these baiting entertainments for full ten months, when she brought forth three young ones, two of which were reared up to twelve months old, and then sold to go to the Surrey Zoological Gardens. The owner of the mother-badger was ignorant of her interesting condition, or I feel sure he would not have allowed such cruelty to be practised. A very respectable gentleman of my acquaintance says that he had a badger in his care in confinement for more than twelve months, after and about which time she proved to be with young, which were brought forth alive and well.—*Frederick Allies; 8, Foregate Street, Worcester.*

Note on the Byblus-Bok.—In the same plate of Speke's sketch, that excellent animal-artist, Mr. Wolf, has given the figures of a fine antelope, called nzoé or "waterbok." The male of this species bears a pair of noble, long, twisted horns, and he is said to be "closely allied to a water-bok found by Dr. Livingstone on the Ngami Lake." It is an aquatic species, and, from living in the moist element, the hair of its

coat is "long, and of such excellent quality that the natives prize it for wearing almost more than [that of] any other of the antelope tribe." Its chief food being the long filaments of the panicles of the Byblus-rush, in order to record this interesting fact in connexion with so important an African plant as the Papyrus or Byblus, I should prefer to call this new antelope Tragelaphus byblophagus instead of T. Spekii, the name suggested by Dr. P. L. Sclater. Another character of this animal is very worthy of note—namely, the extreme length of the toes or fore parts of the hoofs, so that "it could hardly walk on the dry ground," but of course most useful for traversing the mud and marshy shores of the lakes. This provision of nature reminds me of the long toes of the water rail, gallinule and other kinds of the family Macrodactyli of Cuvier, which he characterizes as having "les doigts des pieds fort longs et propres à marcher sur les herbes des marais;" and, in like manner, it adapts that antelope to walking over and being supported upon the long stems of the Byblus-rush and other fluviatile "plants so densely interwoven in the waters"—or, in the exact words of the philosopher Seneca (Nat. Quæst. lib. vi. cap. 8), "ita implicitæ aquis herbæ"—not only of the Upper Nile itself, but also of the Reservoir lakes which feed that mighty and sacred river.—*John Hogg*, in '*Annals and Magazine of Natural History*.'

[I cannot concur in the opinion that living in water has any tendency to produce long or excellent hair: it certainly does not appear to have effected this for the hippopotamus or the dugong. It is better in such cases for observers to confine themselves to the facts, and leave the conclusions from facts for those more accustomed to such speculations.—*Edward Newman*.]

Natural-History Notes, principally from Formosa.

By Robert Swinhoe, Esq.

The following facts, gathered from a reliable friend, may prove of interest to some of your readers.

1. A large white porpoise was seen floating into the harbour at Swatow quite dead. A boat was sent to tow it alongside the ship, when it was found that a large yellowish fish, weighing 7 lbs., was sticking in its food-pipe. The porpoise had evidently over-calculated the capacity of its swallow, and had seized and attempted to devour too large a fish, which had stuck fast mid-way, and had choked it.

2. An osprey flew past the ship with a snake-like creature in its claws. The quarry wriggled round and about the wings of the bird, and greatly impeded its flight. After soaring about some time, and finding it in vain to try and master the prey in the air, the osprey carried it to a rock, where it soon settled the difference. My friend confidently affirmed that the prey was a snake, but I feel pretty sure it must have been a conger eel, or perhaps a murry, both of which abnormal fish might at a distance, even through the best telescope, be mistaken for a snake. It is impossible to believe that ospreys prey

upon snakes, though it is not at all improbable that they may sometimes pounce upon an unwary eel.

3. A thick Cactus-like Euphorbia, whose specific name I cannot just now recall, is cultivated in patches at the Pescodores. It is cut in pieces and used by the China women to give a gloss to their hair. Its milk is applied to burns to allay the pain.

To conclude with a few words on more interesting facts I have observed with reference to shells in this locality. There is a flat Planorbis-like species of Helix frequently found under stones and at the bottom of old walls. The live shells of this species have always, so far as I have observed, their lip missing, whereas those found dead have nearly always an entire lip. I have procured them under stones attended by a black Carabus (beetle), and I thought that perhaps the shells had been dragged there by the beetles for the purposes of food, and in this conjecture I felt confirmed by finding that, when the beetles and shells were confined together in a tin box, the latter were frequently bitten and the mollusk destroyed. But on the lower parts of walls, when they occur in this mutilated state, the beetles cannot reach them; and even when under stones, in this state, the mollusks appear always to be intact, as also the rest of the shell. Perhaps therefore the thick rim-lip from some cause is cast off by the animal during its winter hybernation, to be renewed again in summer.

Again, in a black fresh-water shell (Melania sp.), which occurs in abundance, at this rainy season, in almost every stream, the apex is always broken off. I thought at first that it might be owing to the force of the stream dashing them against the rocks, but on examining some hundreds of all sizes, down to the very smallest, I found that the lips of the shell, which were very delicate, remained intact; and also, in following the streams to their sources, I observed that those found in the higher levels were injured quite in the same way with those found in the lower. The cause I therefore concluded was traceable to some other source. I narrowly inspected several shells, and they presented a perforated appearance near the apex, which is carried in broken patches and tortuous lines over a great part of the surface of the rest of the shell in older specimens. It is hard to detect the cause of this rot, but I should think it was the work of some minute worm or animalcule invisible to the eye. I observe that this eroded or decorticated apex is affirmed of most of the genus Melania, and that Bates, in the 'Amazons' (vol. i. p. 139), notes the peculiarity as strongly evinced in a particular species found in those tropical waters.

Tamsay, Formosa, April 11, 1864.

Koksing's Shells.—There is an island between the mouth of this river and Kelung, called in Chinese "Lobster Island," whereon, in a fresh-water stream, occurs a species of Neritina of Lamarck. I sent a man there, and procured a dozen specimens. These shells are all much worn at the apex, as in several other fresh-water univalves, but to a much greater degree. They are called by the Chinese "Koksing's shells," and the story runs that when that great pirate chief, the "Conqueror of Kingdoms" (that being the literal rendering of his Chinese cognomen), landed on the island to drive the Dutch from it, and to subjugate the Indians, the rightful possessors of the soil, he was an hungered, and, picking up one of these shells, bit the end of it, but finding it bitter threw it down, and muttered a curse against the species. Since then a ban has laid upon the whole race, and every specimen is broken at its apex and marked with the impression of the conqueror's teeth. This story would appear plausible enough to the superstitious, for certainly every specimen that I have seen does look as if it had been bitten. They are said to be peculiar to this small Lobster Island, and I have not yet procured them elsewhere.

Whales.—In the spring of 1860 a large whale, probably Balæna australis of Desmarest, was stranded on the sand-spit at Ape's Hill, Formosa. I saw one myself off Swatow, in May, 1860, when on my way from Hong Kong to Amoy, and I hear that scarcely a year passes but one is stranded in the vicinity of Swatow. The whale I saw jumped almost clean out of the water, and I thus got a good view of it, though it was a mile off at least. I should judge it to have been about forty feet long, with a finless back and a large, flat-looking head, fully one-third its entire length. A friend of mine tells me that when he was stationed, some years ago, at Namoa (an island near Swatow), whales used frequently to visit the neighbourhood in May. They were mostly cows, with their calves, about twenty feet long. Some of the adults were seventy feet long. In the night time they used to gambol close round the ship, making their proximity known by the loud puffing noise they made, resembling the sound produced by the piston of a steam engine. In the day time they might be seen putting their long heads out of the water and opening their immense jaws. The captain of the vessel on board of which my friend lived broke the back of one with a cannon-shot, and the animal lashed about the water for some time before it died. It drifted on shore eventually on Namoa Island, and was cut up by the native Chinese. A firm in Hong Kong, on hearing of the occurrence of whales in the Namoa Straits, fitted out a lorcha for their capture. The whalers built huts and boiling-vats on Double Island, Swatow, and then went to the pursuit. They soon returned, saying that the whales were only razorbacks, the same as are found off San Francisco: they are dangerous creatures to meddle with, and yield too little oil to compensate the risk run in their capture. The whalers took down their gear and returned to Hong Kong. As my friend naïvely observed, before erecting vats and making other preparations for boiling down the oil, they should first have caught their whale. Some eleven years ago American whalers used to rendezvous at Hong Kong, and thence send their oil home to the States; but their countrymen treated them so badly, and cheated them so much, that they now seldom come there, preferring the Sandwich Islands, which are nearer and easier of access to their whale-boats in the Pacific. While on the subject of whales, it might amuse and instruct the readers of the 'Zoologist' to give at length a paper that I stumbled across the other day in the 'Chinese Repository' for November, 1843. It relates facts on the subject of doubtless the same species as I have just been noticing. It is to be found on page 698 of that excellent work, and is headed "Art. IV. Notices of the Whale-fishery in the Chinese Seas, as conducted by the Inhabitants of the Coasts. Communicated for the 'Repository.'"

"During the months of January and February whales and their young resort to the coast of China, to the southward of Hailing Shan, in great numbers, and during those months are pursued by the Chinese belonging to Hainan and the neighbouring islands, with considerable success. The fish generally seemed to be in bad condition, and were covered with barnacles; and their object in resorting to that part of the coast during that season is probably to obtain food, for themselves and young, from the great quantity of squid, cuttle, and blubber-fish which abound, and perhaps also to roll on the numerous sand-banks on the coast, in order to clear their skin of the barnacles and other animals which torment them. They are often seen leaping more than their whole length out of the water, and coming down again perpendicularly, so as to strike hard against the bottom.

"It is an exciting scene to see these boats out, in fleets of from fifty to seventy, scattered over the bays as far as the eye can reach, under full sail, cruising about in search of their prey. Some steer straight ahead, with the crew facing in different directions, observing the boats in their company, and leaving no chance of a spout escaping unnoticed. Upon others the harpooner may be seen leaning over the bow ready to strike, and occasionally waving his right or his left hand to direct the helmsman after the fish in its various turnings, the strictest silence the while being observed.

"The boats are admirably adapted for following up the fish, as they sail well, make little noise in going through the water, and may be turned round and round in half the time and space that a foreign boat occupies. They are of different sizes; the smallest are about three tons, and the largest about twenty-five, carrying two small boats on her deck, and a crew of twelve men, of light draft of water and good length. On the bow is a crooked piece of timber, supported by a stancheon, which serves as a rest for the harpoon when not wanted; it enables the harpooner to stretch well over the bow, and see the fish as they pass below the boat. In this position they are struck, for the weight of the harpoon prevents it being thrown any distance. Abaft the mainmast the deck is rounded so as to form the roof of the cabin; on its top the whole line is coiled.

"The harpoon has only one barb, and about fifteen inches from the point of the iron it is made with a socket, above which an eye is wrought, with a cord attached to the iron, to which the whole line is fastened, and stopped slack along the wooden shaft, so that when the fish is struck, the iron and the line tighten, the shaft draws out, and leaves less chance of the iron cutting out, or loosing its hold of the skin of the fish.

"The whale-line is made of native hemp, and is about sixty or seventy fathoms long, and from four to six inches in circumference, according to the size of the boat. Great length of line is not required by them, for there is shoal water all along the coast for many miles to seaward. One end of the line is fastened round the mainmast; the remainder is coiled away on the top of the house, and carried forward to the harpoon on the bow, where it is made fast, leaving a few fathoms of slack line.

"The boats come out of the different harbours at daylight, and soon spread themselves all along the coast: as soon as a fish is seen blowing, away they go in chase. If fortunate enough to get it fast, the sails are lowered, the bight of the line got aft, the rudder unshipped, and the boat allowed to tow stem foremost. The rest of the fleet, seeing the sail lowered, come up to assist; and as the fish now keeps pretty much on the surface in its struggle to get away, they soon manage to fasten eight or ten harpoons into it, and in a couple of hours or so it is dead from wounds and the loss of blood. They always strike the fish a little behind the blow-hole, on the top of the back. When the fish is dead it is lashed alongside one or two of the boats to float it, and to allow the others to make their lines fast to the tail, and tow it on shore. It is surprising that the boats are not stove in or completely destroyed from their manner of attacking the fish, *i. e.*, sailing right over it and then striking it; but from the cool way in which the Chinese manage the whole affair, I have no doubt that personal accidents occur more seldom than with our fishermen. Their greatest danger is when two or three whales are struck together in the same place, and swim round and over each other, so as to foul the lines. The boats are then drawn against each other and over the fish, and run great risk of being soon swamped and stove in pieces. In one instance of this sort that fell under my observation they had three of their boats swamped, but managed to clear the lines, and kill the fish in a most dexterous manner, after which some of the spare boats returned, and towed the damaged boats on shore. They had no lances in their boats, nor in fact any other weapon except the harpoons, which they refused to sell at any price. All the boats had parts of the whale-flesh salted, which they used as provisions. They refused to give any account of what use they made of the fish, and in general were not disposed to be very civil to strangers, which might arise from jealousy, or a fear of our interfering with their fishery. The fish are, I believe, what whalers call the right whale, and were calculated by those on board to yield, on an average, fifty barrels of oil each."

Van der Hoeven, in his 'Handbook of Zoology,' vol. ii. p. 624, in speaking of Balæna australis, says, "On it affix themselves Balani (*Tubicinella Balænarum*), Coronula balænaris, and species of Cyamus, of which animals not one has ever been observed on the Greenland whale."

I am informed by a travelling friend that at Japan, where he spent two years, the right whale is taken in the inland sea by the Japanese in strong nets; that the flesh is prized as a delicacy, and is sold at about fourpence a pound.

ROBERT SWINHOE.

Tamsay, Formosa, May 19, 1864.

Ornithological Notes from Shetland. By HENRY L. SAXBY, M.D.

(Continued from p. 9131.)

Golden Plover.—The golden plover is one of our earliest breeders, usually beginning to lay in the middle of April, but this season being a very backward one, laying commenced about a fortnight later. Eggs will be abundant until the end of June, but it is by no means unusual to find them as late as the second week in July. In Mr. Newman's useful little book 'Birdsnesting,' p. 34, the materials of the nest are spoken of as "scarcely any, a few fragments of heather and dried grasses carelessly scraped together," and on referring to my note-books I find that those very words might have well been applied to eleven out of the fifteen nests of this species therein described. Occasionally, however, and particularly during the first few weeks of the breeding season, the nest is constructed with more than ordinary care, and then consists of a deep saucer-shaped cavity, thickly and compactly lined with the above-mentioned materials, measuring between five and six inches across. It is almost invariably situated among moss or heather, sometimes by the side of a stone or upon the top of some slight eminence, where there is sufficient growth to afford concealment. The only opportunity which has fallen to my lot of observing the length of time occupied by incubation, occurred three years ago. About noon, on the 7th of May, I found four warm eggs, and on blowing one, ascertained that it was perfectly fresh. I afterwards visited the nest almost daily, and on the evening of the 23rd observed that two of the remaining three eggs were already broken by the chicks. Next morning, on my approaching the nest, three young birds, mottled gray and yellow, ran out of the neighbouring heather. There was no appearance of the broken shells either in or near the nest. I have never known the male take any part in the task of incubation, although he is very attentive to his mate, and constantly supplies her with food while she is sitting; but both birds are so shy that, at such times, their habits can be witnessed only by means of long and patient watching from some place favourable for concealment, such as a large stone or the deep channel of a burn. While the female is sitting the male takes his station upon some eminence near the nest, giving warning by his loud peculiar whistle the moment an intruder appears, who, if he be sufficiently quick-sighted, may see the female start from the nest and run swiftly away: sometimes she will take wing at once, but this most frequently happens when the nest is situated in a valley, or upon the side of a hill, so that an enemy is able to make his appearance suddenly from above. The same thing will occur in any situation when the male is absent, and therefore no warning is given.

Manx Shearwater.—Manx shearwaters, or "lyries," as they are called in this island, appeared on the 3rd of May. As soon as they arrive they either commence digging burrows in the dry crumbling soil in the steep cliffs, or return to old ones which have been used during the previous summer. The holes vary in depth from eighteen inches to two feet, or even more, and are so narrow that the introduction of the hand is a matter of difficulty when the hole happens to be new, and therefore but little worn by the passage of the bird. When a bird is taken from the nest and tossed into the air it seems perfectly bewildered, and, after a little uncertain fluttering, creeps back into the hole, but is nearly sure to desert it soon afterwards, even although not further molested. Very slight disturbance of the soil at the entrance is sufficient to cause desertion. Sometimes the egg is deposited far back in a deep crevice of a rock, and in most cases a sort of nest is made with pieces of dead plants or hay, but sometimes the dry soil alone is sufficient. After the egg has been taken the bird often remains in the hole for several days before finally resolving to quit. Some persons assert that the bird lays only once in the season, but my own observations lead me to the conclusion that, although a second egg is not produced immediately after the first has been taken, the female either seeks a new nest or returns at intervals to the old one and lays again when the proper time arrives, some weeks afterwards. This year the first eggs were found on the 7th of May, but last year I saw them about a week earlier; others will probably be found in a fresh state until the middle or end of June. Although in this species the bill has a somewhat slender appearance, it is well adapted for the work of burrowing in the loose soil, and possesses considerable strength; the hooked point is very hard and sharp, as a certain scar upon one of my hands can testify. It is said that the young reamin in the nest long after they are fully feathered. Eggs of the common barn-door fowl are often passed off as those of the Manx shearwater, and even an experienced eye will sometimes be deceived. Intending purchasers should select specimens which have the shell thin, smooth, perfectly white, and of extremely fine texture, and the ends should be without wrinkles or rough spots. The well-known musky smell and the pale yellow yolk render it easier to identify a fresh specimen. The average length of the egg is about two inches and five lines; the breadth one inch and eight lines.

Snipes.—On the 4th of May I met with great numbers of snipes, both upon the hills and in low marshy ground. Most of them were in pairs, but a few were seen singly. One rose from beside a burn, and within a couple of yards of the same spot I nearly set my foot upon another; it sat crouching among the heather, perfectly motionless, with the head lower than the body, until I again moved, when it flew off, uttering its usual cry as it rose. I have not seen any eggs yet, but there are doubtless plenty about, for young birds are always to be found by the end of May. Although the snipe begins to lay so early, it is not at all uncommon for the peat-boys to bring home fresh eggs during the first two weeks of August.

Common Bunting.—Common buntings arrive in large flocks regularly every autumn, but only a very few remain with us during the breeding season. This year the greater number left on the 8th of May, with a stiff breeze from N.E.

Curlew.—Curlews have been pairing and retiring to the hills for several weeks past, and none are now remaining upon the shores. The first eggs were brought to me on the 15th of May; they were found by a small pool in a peat moor near Hermaness.

Rock Pipit. — Rock pipits were building very early in May. The nests are extremely abundant in the islands of Balta and Hunie, where they are to be found among loose rocks high up in the cliffs, under large stones upon the level ground above, and even in rabbit-burrows. The nest is composed of short, dry grass, sometimes with a few horse-hairs inside, and not unfrequently some small pieces of dry sea-weed are added to the outer part. The eggs are shorter and rounder than those of the sky lark, but are sometimes very similar to them in colour.

Richardson's Skua.—Richardson's skuas arrived on the 6th of May, and at once took up their quarters at the breeding grounds upon Hermaness and Vallafiel, but no eggs have yet been found.

Cormorant and Shag.—Cormorants and shags are sitting; the former commenced laying on the 16th of May; the latter on the 7th. The eggs of the shag vary greatly in shape, some being roundish, others pointed at one end, and others again narrow and greatly elongated. Cormorants nest apart from other species in the precipitous cliffs of one of the North Skerries: the eggs of the second laying are often very small. Both cormorants and shags keep to the nest almost continually after the first egg has been deposited.

Merlin.—On the 15th of May I saw a female merlin fly out from her nest, which was placed upon a ledge of rock about fifty feet from the top of a high sea-cliff. Some fishermen told me that she had been sitting for several days, and that they had made several unsuccessful attempts to reach the nest.

Hooded Crow.—Hooded crows were seen building on the 16th of May, but I met with no eggs earlier than the 23rd.

Sparrowhawk.—On the 18th of May a sparrowhawk visited the garden, and remained there for several days. I have not seen another this year, but a few occasionally breed in our cliffs.

Twite.—Twites begin to lay early in May, but the eggs may occasionally be found as late as August. One very favourite situation for the nest, besides those already mentioned in the 'Zoologist' (Zool. 8194) and elsewhere, is under a long strip of turf which has been nearly reversed by the plough. In such a situation I lately found the commencement of a nest, and derived much interest from watching the progress of the work. When one of the birds disclosed to me the site of its future habitation by flying out suddenly at my feet, I discovered nothing more than a slight hollow which had been scraped beneath the turf, and although I afterwards frequently visited the spot, nothing more was seen of the bird until about twenty hours afterwards, when the pair began placing a number of fibrous roots in the form of a half circle in front, the back part of the cavity being left untouched. In a few hours' time some stalks of plants were added, and from four o'clock in the afternoon until noon the next day the birds disappeared. They next laid the foundation of the other half of the circle, continuing steadily at their task until the whole structure was equal in height all round. They now appeared more eager to proceed, working so diligently that by the evening of the fourth day the mass of roots, grass and stalks of plants formed a perfectly circular wall, an inch and a half in height, and about two inches in breadth, somewhat loose and irregular upon the outside, but with the inside neatly interwoven, and sloping rather suddenly towards the bare patch of ground enclosed. On the morning of the fifth day I observed a few feathers upon the ground in the centre, and the number rapidly increased until the sides were covered more than half-way towards the brim: in the evening the feathers were almost concealed by a quantity of cows' hair, among which a little wool was intermingled. More work was done upon that day than upon any other. Having often found rabbits' fur in the nest of the twite, I now procured a quantity of that material, and strewed it over the ground—not too near, lest it might cause suspicion. Although it was soon discovered, the birds were not quite contented, using it rather sparingly, and carefully working it into a felt-like mass with wool and the hair of cows and horses. This process appeared to be one of difficulty, and to require great care, for it was not before the evening of the eighth day that the task was completed, the brim of the cavity being by that time neatly finished off with a few long, black horsehairs, and measuring exactly two inches and a quarter in diameter. On the ninth day the birds were not to be seen, but by the morning of the tenth day the first egg was laid: every succeeding morning I found an additional one until five had been laid and the female began to sit. I am now eagerly awaiting the appearance of the young birds. It is seldom that the lining of the nest touches the ground, as it did in this instance; a layer of fibrous roots, &c., is nearly always interposed. I observe that the thickness of the lower part of the nest is greatest in those specimens which have been found in bushes, far above the ground. The eggs of this species vary considerably in size and colour. Occasionally they are largely blotched or streaked, and although the ground-colour is generally almost white, it is sometimes of a rather deep greenish blue. The twite is our only native linnet. The common linnet (*Fringilla cannabina*) is often described as breeding here, but I have never yet even met with the bird, although it is said to have been seen near Lerwick.

Sky Lark.—Sky larks are very abundant here in summer, but the greater number leave as soon as winter begins to threaten. The eggs are to be found from the middle of May to the middle of July. I have noted several instances in which the birds have nearly filled a partly finished nest with dry grass, and then, when a sufficient quantity has been collected, built it all into the walls in the usual manner.

Eider Duck and Common Gull.—Eider ducks and common gulls began to build in the island of Uyea about the 21st of May. The nests of the former species are situated either among the rocks a little above high-water mark, or among grass and heather, often more than a hundred yards from the sea. Last year I found eggs of the common gull in the middle of July, among the scattered stones of an old ruined wall which formerly enclosed a small piece of ground about fifty yards square. In that one spot there were more than a dozen nests.

Oystercatcher.—Oystercatchers began to lay about the 24th of May. I have seldom found the eggs earlier than the 20th, and never later than the middle of July. Occasionally the nest is situated upon a ledge of rock in a high cliff. I have never met with more than three eggs in one nest.

Great and Lesser Blackbacked Gulls and Commom Guillemot.—Great and lesser blackbacked gulls' and common guillemot's eggs were first found about the 24th of May. Guillemots are now (May 31st) becoming rather scarce. In places where a man used to take as many as seven dozen eggs in a day he now scarcely finds a dozen.

Snow Bunting.—On the 28th of May, a cold sleety day, with N.E. wind, I observed several small parties of snow buntings flying northwards, uttering their usual clear, ringing notes.

Redshank.—Redshanks are still to be met with upon several parts of the shore.

Longtailed Duck.—Longtailed ducks are still here, but there are very few adult birds among them.

Whitetailed Eagle.—Whitetailed eagles have hatched in Yell. Now and then they pay a visit to this neighbourhood in search of food for their young, but I am glad to say they have hitherto kept out of reach of guns.

Arrivals in May.—The following completes the list of arrivals in May:—

May 3. Wind S.E. A sand martin. Very seldom seen here.
„ 9. „ N.E. A flock of about two hundred fieldfares.
„ 13. „ N.E. The first whimbrel.
„ 14. „ N.E. Two bramblings and a willow wren.
„ 17. „ N.W. Two common sandpipers.
„ 28. „ N.E. Land rail. About a week later than usual.

Skua (Lestris catarractes).—I was unable to ascertain the precise date of the skua's arrival, but the first egg was found on the 14th of May. They commonly stay with us from the end of April to the end of August. One of the only three breeding-grounds in the British islands, and the only one in Unst, is situated upon a hill called Hermaness, on the west side of Burrafirth, but there are very few skuas there now. Instead of the fifty or sixty pairs which used formerly to breed there, only about five pairs now remain, and even they will soon disappear. Some used to be found upon the opposite hill of Saxaford, but the last eggs were taken there three years ago. In some seasons the skuas select the very top of Hermaness, and in others the sloping ground facing the east; sometimes when they are much disturbed by egg-gatherers they change their ground two or three times in the course of the summer. If you come upon the ground soon after their arrival, you will see them flying about overhead, as though in doubt as to your intentions. If you have never read the fable of the goose and the golden eggs, and are desirous of obtaining a shot, you need only toss up a dead gull, or even wave a white handkerchief, and an opportunity will not long be wanting; but at any time a dog running by your side will answer the purpose equally well, only he must be prepared to part with a little of the hair of his back occasionally, for in spite of the utmost vigilance upon his part, one of the birds will be nearly sure to sweep down and strike him unexpectedly, and be far out of reach by the time that he first catches sight of a small portion of his coat flying to leeward. As soon as laying has commenced, the birds become extremely bold. As you approach suspicious ground, you will hear a low croaking sound, and at the same time a skua, in all probability a female, will begin circling round and endeavouring to lead you away in one particular direction. But if you wish to find the eggs you will turn your face as nearly as possible towards the opposite point of the compass and walk towards it in a zigzag manner; then attentively watch the movements of the two birds (for by this time the male will have appeared upon the scene), and the nearer you approach the nest the more daring they will become. As many as two or three times in a minute a bird will make its attack, each time charging directly at your face, rising suddenly when within a few feet, and passing close over your head—so close, indeed, as sometimes even to knock off your hat. The bird acquires an extraordinary amount of velocity in its descent towards the object of attack, and it is no exaggeration to compare the sound of the steadily expanded wings to the rushing of a small sky-rocket. In places where skuas are much persecuted, as they unfortunately are at Hermaness, they are rather less bold, but even there they become utterly regardless of danger as soon as the young are hatched. I have not yet seen an eagle make its appearance near the forbidden ground, but have twice witnessed the complete discomfiture of a party of ravens. The nest consists of a hollow in the moss and heather, carefully lined with small pieces of lichen, moss, heather and dry grass, and measures nearly a foot in diameter. The eggs are so much sought after that the birds seldom hatch, and to this cause the great variety in the appearance of the eggs may chiefly be attributed, the colouring matter being exhausted by repeated laying, so that the latest eggs are always the lightest in colour, as well as the smallest in size. In many collections I have seen gulls' eggs of different species labelled as those of the skua, and although it is easy in most cases to detect the imposition, it is very difficult to define the precise points of distinction. However, generally speaking, the egg of the skua is finer in texture, rather more glossy and smoother to the feel, and more frequently either of a clayey or a purplish brown colour; the spots are fainter and more scattered, and, if we were looking at an artificial production, we should say that the markings had been more carefully laid on and softened away at the edges. The dark variety tinged with purplish brown does not, so far as I am aware, occur in any gulls' eggs. The specimens which are most difficult to identify are those of the pale bluish green and nearly spotless variety, for which similar ones from the nests of the lesser blackbacked and herring gull are often substituted, but the finer texture in genuine specimens is a trustworthy guide in most cases. Those eggs which are laid late in the season are often rough at the ends. Although one can scarcely be too particular in describing anything connected with a bird so rapidly disappearing from among us, yet I fear that those of my readers who have ready access to Mr. Hewitson's work on the 'Eggs of British Birds' (and I trust that there are few who have not), may consider the above details somewhat unnecessary.

Baltasound, Shetland, May 31, 1864.

Snow Bunting.—During the early part of June small parties of snow buntings were still to be seen flying northwards. On the 4th I saw a female among some loose stones upon the beach at Balta, but my search for a nest was unsuccessful. The only instance in which I have obtained the eggs has already been recorded (Zool. 7709), but there can be no doubt that this species breeds regularly in the cliffs below Saxavord, where it may often be met with in the months of June and July. The most likely spot for a nest cannot be thoroughly explored without great risk, even by the best climbers; indeed it was only last year that a portion of the loose rock gave way beneath the feet of a man, and dashed him upon the beach two hundred feet below. A few days ago I saw some snow buntings in full summer plumage.

Razorbill and Kittiwake.—About the 1st of June razorbills and kittiwakes began to lay. The former species can scarcely be said to abound here now, although some years ago its eggs were almost as common as those of the guillemot are at present.

Rock Dove.—Although rock doves began to breed in April, no eggs were brought to me this year before the 3rd of June. This bird inhabits deep caves upon the sea-coast "all the year round," and certainly rears more than one brood in a season. It has been asserted that the eggs are to be found at nearly all times of the year, but it is almost needless to say that this is an error. I have never heard of fresh eggs being found earlier than April or later than August. Most of the nests are placed upon ledges so near the roof, that, to a person standing below they are quite lost in the gloom. I have often landed in these caves, and although nests must have been abundant upon every side, I have seldom been able to get at them. The few within my reach have always been quite flat, and composed of grass, either dry or green, and sometimes in full flower. Well-feathered young birds and fresh eggs may frequently be found upon the same ledge. At harvest-time flocks of rock doves resort to the corn-fields, and there feed largely upon grain. Some persons, wishing to defend this beautiful bird from persecution, state most positively that it seeks its food only upon the ground, and therefore merely picks up that portion of the grain which would otherwise be wasted, but, as might have been expected, this statement has only had the effect of causing our numerous gunners to watch the bird more closely, by which means they have discovered what they never took the trouble to ascertain before—that it occasionally alights upon the sheaves themselves and devours the grain in large quantities. The result is that its enemies, having now established the charge, the species is rapidly becoming exterminated. In the crop of one bird, shot in the very act of robbing a sheaf, I have counted upwards of seven hundred grains of oats. Now even allowing that all these were taken directly from the sheaf, and that for one whole month it was the custom of each bird to procure its entire daily food in the same manner, no wise farmer would attempt to banish the doves from his fields without first ascertaining whether the damage done during that one month really counterbalanced the good service rendered during the other eleven months. A little trouble, although it might cause the death of a few birds, would convince him that even when a rock dove is feeding in the midst of abundance of grain, it almost invariably picks up in addition astonishing quantities of small seeds, and that, during the greater portion of the year, the seeds of various weeds, together with great numbers of roots, particularly those of the destructive Triticum repens, or couch grass, alone furnish it with the means of subsistence. The seeds which are most commonly found in the crop are those of Plantago maritima and Sinapis arvensis, and I have occasionally seen the bird picking at the ripe pods of Capsella bursa-pastoris.

Dunlin.—Dunlins were laying early in June, but sometimes the eggs are found about the second week of May. All the nests that I have seen have been situated among tall grass or heather, either in low meadows or upon peat moors, but it is not often that they occur very high above the sea-level. On the 18th of June I found three newly-hatched young birds, apparently not more than a day old, and beautifully mottled with cream-colour and various shades of rich reddish brown. They run from the nest very soon after they are hatched, and are always accompanied by both parents, who then show but little fear of danger, running round an intruder, as if for the purpose of leading him away, but I have not yet seen them feign lameness, as they are said to do.

Puffin.—Puffins are more than usually numerous this year, and commenced laying about the 4th of June. A very remarkable specimen of the egg was brought to me on the 16th; although the ground colour and the shape are as usual, it is completely covered with numerous long irregular streaks of light brown and purplish gray of various shades. Puffins breed abundantly in many of the cliffs in the north of this island, sometimes occupying deserted rabbit-burrows, but usually, I believe, digging out holes for themselves. I have seen both sexes employed at this work. Sometimes there are two entrances to one nest, but this seems only to be the case—when the face of the cliff being irregular—a new burrow happens to strike the course of an old one. The fashion seems to be to lay the egg upon the bare sand, and to add a few pieces of grass by way of a nest as incubation proceeds; occasionally, however, a little grass is found under a perfectly fresh egg.

Ring Ouzel.—On the 6th of June I saw a ring ouzel upon the rough ground beside the Burn of Watley, but there were no signs of a nest. At that time the wind was blowing strongly from S.E.

Black Guillemot.—Black guillemots began to return to their breeding places about the middle of June, but they are late breeders, and no eggs have yet appeared.

Whimbrel.—Whimbrels, which were so numerous during the latter part of May, have now almost entirely disappeared from the coast and retired inland to breed. The few which I have shot upon the shore at this time of year have, with one exception, been males. On arriving here they appear in couples, or in very small parties of about six or eight, at high water, haunting flat grounds inland, or the tops of low cliffs, but leaving these for the shore as soon as the falling tide begins to expose the sea-weed-covered rocks. Never having seen the eggs before the beginning of June, I conclude that this species may be considered a later breeder than the curlew.

Wren.—One of the very few wren's nests which I have seen here was brought to me on the 11th of June; it contained seven eggs, and was found at Woodwick inside the roof of a "lodge" or hovel occupied by a number of men and boys during the fishing-season.

Richardson's Skua.—Richardson's skuas began to lay early this month. In this island a large colony occupies the greater part of the top of Hermaness, and a few scattered pairs breed regularly upon several of the high moors. In the islands of Fetlar and Bressay they are very numerous. In their habits they closely resemble the larger species, but are less bold in their approach to man. The eggs are among the most beautiful which are to be found in these islands, and may easily be obtained in all their varieties, from very dark and almost uniform olive-brown, to clear, bright, spotless green: specimens beautifully zoned are of frequent occurrence. The bird's habit of fluttering and tumbling in front of an intruder upon the privacy of their haunts is well known, but it does not appear to be entirely confined to the breeding-season. At all times this species is fond of sitting half buried among the heather and grass, and this is more particularly the case in rainy or foggy weather.

Snowy Owl and Eagle Owl.—On the 20th of June I was informed that a snowy owl had been seen about the hills for nearly a week previously, and next day a man shot it, after a chase of five hours, when, finding that it was very slightly wounded, he brought it alive to me. In the hope of being able to learn some interesting particulars regarding its habits, I at once determined to keep it alive, and I am happy to say that at the present date it has every appearance of being in perfect health. The man told me that he saw another of a grayish colour and rather smaller flying near it, and there can be very little doubt that this was a young one of the same species, for the bird now in my possession bears the marks of considerable age, and the feathers of the breast, wings and tail are much worn, as though it had lately been engaged in incubation. All my endeavours to procure the second one have hitherto proved fruitless, although it has been seen several times by some of the people. It is strange that although snowy owls bear a very heavy shot, a very slight wound is sufficient to bring them to the ground. My prisoner only received a mere scratch upon the back, and as soon as it came into my hands it was able to fly all about the room, yet scarcely an hour before that, it had been brought down by the shot and carried off. The only way of accounting for this is by supposing that the contact of the shot conveying the impression that the enemy was at close quarters, the bird at once threw itself into the attitude of defence, and thus allowed itself to be taken in hand: there can be no doubt that if the man had not at once run up the bird would soon have recovered from its surprise and made its escape. Like most other birds of prey, the snowy owl when wounded throws itself upon its back and strikes fiercely with its claws, but any person who feels bold enough to handle an angry "kat-yogl" would do well first to examine some very ugly scratches upon the stock of a certain gun in my possession. A man to whom I showed my captive told me that last autumn he saw an owl about the same size, only it was of a dark colour, and had "ears like a rabbit's." It was sitting upon a stone on a low piece of ground near Haroldswick, and allowed him to get very near. Of course this must have been an eagle owl, a bird which formerly visited these islands not unfrequently, but is now of extremely rare occurrence.

Raven.—Ravens are still at Uyea Sound in almost incredible numbers. On visiting the island of Uyea some evenings ago, I was astonished to observe the edges of some of the cliffs perfectly blackened with crowds of these birds: I heard several estimates of their number, and, after making full allowance for a considerable amount of exaggeration, certainly satisfied myself that eight hundred would be very near the mark. The gathering was largest on the evening of the 18th of June, since which time it has been rapidly decreasing.

Peregrine Falcon.—I heard that young peregrine falcons left their nest on the 28th of June.

Redthroated Diver.—Redthroated divers are now laying. The eggs are very seldom met with in this island, although they were abundant a few years ago. At this season there are always plenty in the island of Yell.

Wheatear and House Sparrow.—Wheatears sometimes build in holes of walls upon the remains of old nests of the house sparrow. I found a nest in such a situation about a fortnight since; it was composed of the usual materials, and could easily be lifted entirely away from the flattened remains of the old nest. Sometimes the order of things is reversed, and, if the crevice be sufficiently large, a house sparrow will construct its own comparatively clumsy habitation upon the neat little nest of a wheatear.

Common and Ringed Guillemot.—Common and ringed guillemots are now breeding plentifully. On looking over my notes I can find very little that is new regarding the right of the two birds to be classed as distinct species, but as many ornithologists are still in doubt, I beg to offer such small amount of evidence as I have been able to collect. It was only when I began to examine for myself that my belief in the two varieties (?) breeding apart was discarded. It is true that, now and then, one sees one particular portion of the rock inhabited solely by three or four of the ringed birds, but by far the greater number breed in company with the common ones. With great difficulty I procured a large number of the eggs of Uria lacrymans, almost from under the birds themselves, and then, naturally enough, comforted myself with the notion that, "species or no species," their parentage at least was beyond all dispute; but a paper by the late Mr. Wolley (Zool. 3477) convinced me of my error. I was then led to confirm his views by means of careful observation, and soon became satisfied that when sea-birds nest together in large numbers they do not always keep to their own eggs. However, no matter what theories may be advanced, the fact is plain, that as a rule the eggs of the two birds differ considerably, and this will at once be allowed by any ornithologist who will favour me by examining my collection. It will be seen that generally in the eggs of U. lacrymans the blotches are larger, the ground colour is clearer, there are fewer under tints, the markings are better defined and less prone to take the form of streaks; in size and shape, too, the egg is peculiar, being rather small, and shaped something like that of the razorbill. Yet for all this, it cannot be denied that many specimens are so like those of U. troile in size, form and colour that to distinguish them is utterly impossible. Now, if a mere observer may offer an opinion in the matter, I would confess my belief that U. lacrymans and U. troile represent one species in two states of plumage, nor does the difference among the eggs form any objection to the view, for it is well known that young birds as well as very old ones produce the smallest eggs, but at what precise age U. lacrymans acquires its peculiar plumage there is as yet no evidence to prove. One would imagine that in such a place as Shetland the problem might easily be solved by keeping the birds for some time in confinement. I have tried the experiment, but they have invariably died. However, it is my intention this year to have a number of birds kept by different people who can be depended upon to keep them with care, and should this plan also fail it will only remain for me to endeavour once more to discover the cause of failure and "try again."

Turnstone.—A few turnstones are still remaining with us, but they show no signs of breeding here; I have usually met with them in pairs at this season, and once, in the middle of June, I shot a female containing a nearly perfect egg. Very suspicious-looking so-called snipes' eggs have sometimes been brought to me from localities frequented by the turnstone.

Herring Gull.—Herring gulls are breeding in immense numbers in most of the cliffs. Among the many strange varieties of the egg obtained by me this year I have one no larger than that of a pigeon, but shaped and coloured precisely like an ordinary specimen; the discovery that it contained no yolk at once destroyed all my speculations as to the probability of some rare species of gull having taken a fancy to breeding in our cliffs. A rather common variety of the herring gull's egg is of a pale bluish green, with a few scattered spots of pale neutral tint.

Redbreasted Merganser.—Redbreasted mergansers are now to be seen in pairs upon various parts of the coast. Although they often lay among long grass they seem to prefer the shelter of a roof of some kind, and thus it is that the eggs are most commonly found under rocks, in rabbit-burrows, and even in crevices of old walls, but whatever be the situation chosen the nest almost always consists of a hollow scraped in the ground, and lined to a greater or less extent with down, feathers and dead plants, the amount of material being increased as incubation proceeds. Sometimes it happens that no attempt is made to line the nest until after the first few eggs have been deposited.

Henry L. Saxby.

Baltasound, Shetland, June 30, 1864.

Remarks on the Birds seen during a Visit to Flamborough, in the last Fortnight of July, 1864. By John Cordeaux, Esq.

Having just returned from an ornithological excursion to Flamborough, a few remarks on the present state of this once famous breeding-place, and on the birds still to be found there, may be interesting to the readers of the 'Zoologist.'

Many thousands of guillemots, razorbills, puffins and kittiwake gulls still frequent these magnificent chalk cliffs for the purposes of incubation. The numbers, however, have of late years been greatly on the decrease. This circumstance, much to be regretted by all true ornithologists, is owing to two causes; one, the plunder of the eggs during the spring by the neighbouring villagers, and the other, the wanton and wholesale destruction of the birds themselves by the visitors who frequent the neighbourhood during the summer months. Formerly two old men seem to have had almost the monopoly of this dangerous kind of birdsnesting. Now, I am told, there are as many as twelve "cliff-climbers" who gain a part livelihood by plundering the nests of the sea-fowl, and selling the eggs as an article of consumption. Since the railway has been opened along the East Coast, through Bridlington and Filey, hundreds of persons are brought down by "cheap excursion trains" who otherwise would never have visited Flamborough, and boats and guns are too readily obtained to give any chance of a quiet life to the poor sea-fowl. It is scarcely possible to take a stroll along the top of the cliffs, during any fine day in the summer months, without hearing the constant report of guns fired from boats below. It reminded me more than anything else of a rook shooting day in a well-stocked rookery.

Many hundreds of kittiwake gulls are shot during the season for the sake of their skins, which are preserved and sent up to London, to fashion into the ornamental feathers used for ladies' hats. This constant persecution of the birds must in time (as it has already done to the cormorants and great blackbacked gulls) drive the remaining sea-fowl to seek refuge in some other quarter less exposed to the ravages of man. Formerly great numbers of birds nested comparatively unmolested on the rocks in the immediate vicinity of the lighthouses; but these cliffs being of low altitude and easily come at, the birds have been driven away. They are now only to be found, in any quantity, on the magnificent range of cliffs between the north landing at Flamborough and Speeton. For some miles between these two places the cliffs rise perpendicularly to the height of between three hundred and four hundred feet; in some places higher. The face of these rocks is worn, by the action of many a wintry storm, into narrow ledges and shelves; and they are also intersected by deep clefts and interstices, affording ample room to the thousands of sea-fowl which resort thither in the spring. The constant wash of the waves has excavated the base of the rocks into deep caves and holes, in some places forming grand natural archways: these are the sea-washed cotes of the rock pigeon.

I subjoin a list of the birds, which, with two exceptions to be mentioned, came under my observation during a visit to Flamborough in the last fortnight of July.

Jer Falcon. A fine specimen of the jer falcon, in immature plumage, was trapped a few weeks since on the Leckton Moors, near Pickering. It came into the hands of Mr. Jones, of Bridlington Quay, for preservation: he informed me that he sold it to Mr. A. Clapham, of Scarborough. I was unfortunate in being a few days too late to inspect the bird.

Peregrine Falcon. By no means a rare visitant to these cliffs; more especially seen, however, during the autumn and winter, doubtless attracted by the numerous rock pigeons. I was shown several stuffed specimens of the peregrine falcon killed at Flamborough.

Kestrel. Not uncommon.

Buzzard. One afternoon, during a stroll along the south shore, I saw a large hawk gliding along the face of the cliff. It came right over me at the distance of about forty yards. From its flight and colour I have no doubt it was a buzzard, and probably, from its general light appearance, Buteo lagopus.

Wheatear. Common. In my rambles on the cliff-tops constantly saw this lively little bird flitting along from buttress to buttress of the great broken masses of boulder clay which cap the chalk cliffs.

Rock Pipit. Numerous, more particularly along the south cliffs. Here the sea leaves, at low water, a narrow beach of rock and shingle covered with the common bladder-weed. This was a favourite haunt of the pipit, and they might be seen, several together, searching busily amongst the mass of sea-weed for marine insects.

Jackdaw. Numerous. Breeds in holes near the cliff-top. I saw two young birds, hardly yet able to fly, on a narrow ledge of rock in close vicinity to some guillemots. The jackdaws are said to commit great havoc amongst the eggs of the sea-fowl.

Sand Martin. Common. Several colonies of sand martins exist on the coast: there is a considerable one in an almost inaccessible position near the south landing. The holes are bored in a narrow band of sand between the chalk and boulder clay.

Rock Pigeon. Breed in considerable numbers in the sea-caves at the base of the cliffs. At this season they go far inland to feed, returning in the evening to their cotes in the cliff. As they dash rapidly out of these caves on the passing of a boat, they offer a very difficult mark to the roving gunners, and are seldom killed. By being often shot at they have become very shy and wary, and dash out of the crevices, and away over the cliff-tops, on the least noise made by approaching boats. In extremely severe seasons they will resort for a time to the dove-cotes in the neighbourhood, and feed in company with the domestic bird.

Sanderling. Five or six seen.

Oystercatcher. Several flocks arrived on the Flamborough coast during the last week in July. I saw one numbering sixteen and another nineteen birds. In walking home late one evening along the south coast, at low-water, I heard the shrill whistle of the oystercatchers as they rose from their feeding-grounds on the mussel beds, near the shore, long after it was too dark to see the birds.

Whimbrel. Three seen. A few of these birds (July 26th) have already arrived on the coast.

Redshank. Shot one, in full summer plumage, near the south landing. I saw this bird swimming, evidently with great ease and dexterity, in a pool of water left amongst the rocks by the receding tide.

Dunlin. Saw several small flocks, both on the north and south shore, near Bridlington Quay.

Common Coot. Several seen on Hornsea Mere.

Black Scoter. One seen; it was flying close in shore.

Great Crested Grebe. I saw three, one male and two females, on Hornsea Mere, also a young bird, covered with down, swimming and diving in company with the old birds. The upper parts of the young bird striped with light brown; under parts gray.

Redthroated Diver. I saw one, in the possession of Mr. Bayley, of Flamborough, shot off the coast that morning (July 26th); a remarkably fine bird, the throat showing a slight trace of the red feathers.

Common Guillemot. Exceedingly numerous; more commonly seen than any other bird.

Ringed Guillemot. Scarce. Out of many hundreds of guillemots which, with the aid of a powerful landscape-glass, I examined from the cliff-top, I only detected one of this closely allied species. I had a most distinct and perfect view of the bird, which was certainly not more than eighty yards from my position. It was sitting on a ledge of the opposite cliff, in company with several of the common guillemot. One of the principal bird-stuffers in the neighbourhood told me that, on the average, two or three of this species pass through his hands, for preservation, every year; this year, so far, he has only had one. The ringed guillemot is well known to the Flamborough boatmen, and several have been seen by them this season. The eggs are said to be *invariably* white, or nearly so: of two which I saw in the possession of an egg-collector, one was white, the other *white*—marked, however, with a few slight brown streaks round the thick end. [See *ante* p. 9241.—*Edward Newman.*]

Puffin. Numerous. The eggs of the puffin are extremely difficult to procure from the cliffs, as, according to their usual habit, they deposit their eggs at the very end of the deep and narrow crevices which penetrate these rocks.

Razorbill. Common, but in much less numbers than either the puffins or guillemots.

Common Cormorant. Formerly bred at Flamborough; only one seen. It was about one hundred yards from the shore, and busily engaged in fishing. I counted slowly thirty-six to forty during the time the bird dived to its reappearance again.

Sandwich Tern. One seen.

Common Tern. Several seen in Bridlington Bay.

Blackheaded Gull. Common. There is a large breeding-place of the "peewit gull," as it is called, on Hornsea Mere.

Kittiwake. Very numerous. Breeds in large numbers on the most precipitous part of the Speeton Cliffs. It was remarkable to see the extreme narrowness of the ledges of rock which afforded a cradle for the young kittiwakes; apparently the slightest movement on their part would precipitate them to the bottom of the cliff. Nothing can be more dissimilar than the adult and immature plumage; the black beak and spots on the head, and the black tertiaries and band across the tail of the young birds, giving them quite the appearance of a distinct species.

Common Gull. Frequent.

Herring Gull. Less commonly seen.

Great Blackbacked Gull. Three seen together. One of them, a young bird in immature plumage. These gulls formerly bred at Flamborough.

Common Skua. Occasionally seen off the coast. I saw a very fine specimen of the skua which had just been shot on Filey Bay.

Manx Shearwater. Not often seen; one shot during my visit.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
August 10, 1864.

An additional List of British Birds found in South Africa.—The occurrence of the following species in South Africa has come to my knowledge subsequently to drawing up the "List of British Birds occurring in South Africa," which was published in the 'Zoologist' for 1863 (Zool. 8675). The birds in the following list from Walvisch Bay, and those from Damena Land in the previous list, were collected by Mr. C. J. Anderssen; those from Natal, mentioned in both lists, were mostly obtained by Mr. Thomas Ayres; and to these two gentlemen I am chiefly indebted for the information I have obtained on this subject.

Sanderling (*Arenaria calidris*). Natal, Walvisch Bay.
Glossy Ibis (*Falcinellus igneus*). Natal.
European Night Heron (*Nycticorax europæus*). Natal.
Great Crested Grebe (*Podiceps cristatus*). Walvisch Bay.
Pomarine Skua (*Lestris pomarinus*). Walvisch Bay.
Caspian Tern (*Sterna Caspia*). Walvisch Bay.
Solan Gannet (*Sula bassana*). Walvisch Bay.

I have also had the opportunity of personally examining South-African specimens of the following species, which I included in my former list on authority only, not at that time having seen South-African examples of them, *viz.*:—

Gray Plover (*Squatarola helvetica*). Natal.
Turnstone (*Strepsilas interpres*). Natal.
Little Stint (*Tringa minuta*). Natal.
Whimbrel (*Numenius phæopus*). Natal.

In my former list I included (on the authority of Dr. Hartland) the islands of Madagascar, Mauritius and Bourbon as localities for the European waterhen (*Gallinula chloropus*). This is an error, which I take this opportunity of correcting, the waterhen found in Madagascar and Mauritius belonging to a nearly allied but distinct species, to which my friend Mr. Alfred Newton has assigned the name of Gallinula pyrrhorrhoa.—*J. H. Gurney.*

The Fieldfare in Leicestershire in July.—On the 29th of July, 1864, a fieldfare (*Turdus pilaris*) was shot in the garden of Mr. H. R. Hurst, The Oaks, near Kirby Muxloe, Leicestershire. The bird had been about the garden during the summer. This seems so unusual a circumstance that I have sent the bird up to the editor of the 'Field' for confirmation. Mr. Hurst also states that a redwing built in his grounds this spring. He is a keen observer and not likely to be mistaken. One bird only was hatched, and he has kindly sent me one of the addled eggs. It is a trifle smaller than a thrush's egg, more rounded at the ends; the ground colour is a greenish white, spotted with reddish brown of various shades. I am not competent to form an opinion from the egg, but it certainly is none of our resident thrushes.—*Joseph H. Ellis; Leicester, July* 30, 1864.

[I have met with many well-authenticated instances of the fieldfare continuing in Britain throughout the summer, but I have never known it breed. I must not venture an opinion on the supposed egg of the fieldfare.—*Edward Newman*].

Wood Wren and Chiffchaff in the North of Scotland.—In Capt. Hadfield's interesting notes on "Birds observed on the North-East Coast of Scotland" (Zool. 9165), he notices both the wood wren and chiffchaff as occurring plentifully. This is, I believe, the first notice of their being found so far north; even in the South of Scotland both species are considered much rarer than the willow wren. Perhaps Captain Hadfield will kindly give us more information on the subject, and set at rest all doubts on the identity of the birds observed.—*C. R. Alston; Stockbriggs, Lesmahagow, Lanarkshire.*

Lesser Redpoles' Nests near Birmingham.—At Zool. 9210 Mr. Hamilton, of Manchester, notices the occurrence of a lesser redpole's nest near Chester. In reply to his inquiry, Whether it is not rather far south for this species to breed? I beg to remark that I have repeatedly taken the nests and eggs of this bird in the neighbourhood of Birmingham.—*T. Beaven Rake; Fordingbridge, August* 8, 1864.

Has the Great Black Woodpecker occurred in Norfolk?

By Henry Stevenson, Esq.

The introduction of the great black woodpecker (*Picus martius*) into the list of Norfolk birds rests entirely upon the following passage in Yarrell's 'British Birds' (2nd edition, vol. ii. p. 134),* where, in enumerating the various records of the appearance of this species in England, that author says:—"A few years since a communication was made to the Zoological Society of London, that two examples of the great black woodpecker had been at that time killed in a small wood near Scole Inn, in Norfolk."

This note, on Mr. Yarrell's authority, has been since copied by Macgillivray and Morris, and amongst local authors by the Rev. R. Lubbock, in his 'Fauna,' by Messrs. Gurney and Fisher, in the 'Zoologist' for 1846 (Zool. 1315), and still more recently by myself in a paper on the "Ornithology of Norfolk," written in 1863 for the third edition of White's 'Gazetteer' of this county (see also 'Zoologist,' 1864, p. 9025). I had long had an impression that in this instance a mistake might have arisen between the great spotted and the great black woodpecker, when this idea was confirmed very recently by circumstances originating in a conversation with Mr. Spalding, of Westleton. Whilst inspecting that gentleman's collection in the summer of 1864, I happened to mention the Scole woodpeckers with some expression of doubt as to the identity of those specimens, when he referred me to Mr. Francis Drake, of Billingford, as an individual most likely to be able to afford information. At once taking the hint, I shortly received the following obliging letter from Mr. Drake, who, to my great surprise, proved to be the very person who had shot the birds in question.

"Billingford, June 29, 1864.

"Dear Sir,—In reply to yours, and being equally interested with yourself and Mr. Spalding in birds, I feel inclined to think the birds I shot many years since at Billingford, near Scole, were the large spotted woodpecker, although I was told at the time they were the black.

"Yours very truly,

"FRANCIS DRAKE."

In a subsequent letter, in answer to further inquiries, Mr. Drake says, "It must have been more than thirty years since I shot the birds. They were evidently larger than the wryneck, with red heads. I was not aware they were in print, until I saw them mentioned in Mr. Lubbock's work on the 'Fauna of Norfolk.' They were *not preserved*.

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* The first edition of this work, in which the same statement occurs, was published in 1843 in a completed form, but had been issued in bi-monthly parts since 1837.

I cannot remember if they had white about them." Having pursued the inquiry thus far, I was desirous of finding the notice referred to by Yarrell, in the Zoological Society's 'Proceedings,' but failing in this, I wrote to the Secretary, Dr. Sclater, to know if he could in any way assist me in discovering by whom the "communication" had been originally made. In a few days I received the following reply, assuring me of that gentleman's persevering, though fruitless, efforts to comply with my request.—

"Zoological Society of London,
July 16, 1864.

"My dear Sir,—I have searched in vain in our 'Proceedings,' and also in our written remarks, for any traces of the paper you mention. I cannot find anything like it. I fear it was only mentioned in the way of conversation at the Meeting, or perhaps specimens exhibited, and was never entered in our Minutes.

"Very truly yours,
"P. L. SCLATER."

Here, therefore, my researches must end, but I think enough has been elicited to render it more than doubtful whether the birds referred to were really specimens of the great black woodpecker, and that, until some more authentic instance of the occurrence of that species shall entitle it to be replaced, it will be best removed altogether from the Norfolk 'List.' Mr. Drake particularly remarks that the birds were not *preserved*, which would undoubtedly have been the case had they been exhibited before the Society in London, and Mr. Yarrell speaks only of a "communication" made without any reference to specimens. Supposing also, as Dr. Sclater suggests, that the matter was only "mentioned in the way of conversation," without any entry being subsequently made in the Minutes, it is most probable that Mr. Yarrell was himself present at the Meeting, or was informed of the circumstance by some other Member of the Society.

HENRY STEVENSON.

Norwich, August 14, 1864.

[I am extremely gratified to find Mr. Stevenson taking up this subject. I heartily wish that one or other of my correspondents would investigate, in an equally searching manner, every instance in which the great black woodpecker is reported to have visited this country. The habits of this bird are so well known, and are so opposed to anything like an oceanic flight, that it seems in the highest degree improbable that it ever made its appearance here.—*Edward Newman.*]

Black Swan near Beverley.—Nearly a year ago, curiously enough it fell to my lot to record the capture of a black swan on the River Hull. The bird shot on the 1st of August, 1863, was an old male, in perfect plumage, and with wings unpinioned. Although I subsequently found that a black swan had escaped from a private water in the neighbourhood, I have never been able to identify with certainty my specimen as the escaped bird. I have now to record a similar capture on the same river. On the morning of June 23rd, 1864, between four and five o'clock, a second specimen of this rare and elegant bird was shot on the River Hull, close to the Hull Bridge, and about one mile and a half from Beverley. No intelligence has been received up to the present date of the loss of such a bird from any water in this neighbourhood. I saw the swan in the flesh, and had the pleasure of dissecting it. Its length, from tip of bill to tip of tail, was 4 feet 2 inches; span across the wings 5 feet 8 inches. Its weight was 11 lbs. The condition of the bird was excellent, the body being loaded with fat. The sex was female (mature). The gizzard contained a quantity of vegetable matter, too far advanced in trituration to admit of its exact nature being recognized. It was mixed up with flinty gravel. By reference to my notes on the measurements and dissection of the black swan, shot on the 1st of August, 1863, I find that, although both the specimens were fully mature, the male bird was the largest. In external contour, plumage, bill, eye and foot, both birds were very similar, and the difference in size was not so great as to be readily perceived. The female was altogether a lighter made and more delicate-looking bird, but this is only apparent when the specimens are compared side by side. The following will demonstrate at a glance the exact difference in size between the two specimens:—

Male, shot August 1, 1863.		*Female, shot June* 22, 1864.	
Total length, from tip of bill to tip of tail	4 ft. 5 in.	Total length, from tip of bill to tip of tail	4 ft. 2 in.
Across wings	6 „ 5 „	Across wings	5 „ 8 in.
Weight, 11 lbs. (very thin).		Weight, 11 lbs. (very fat).	

—*W. W. Boulton; Beverley, July* 8, 1864.

The Bridled Guillemot at Flamborough Head.—I observe in this month's 'Zoologist' a note from Mr. Boulton (Zool. 9211), in which he mentions the capture of a bridled guillemot (*Uria lacrymans*) at Flamborough Head, and remarks that it is of such rare occurrence that one has not been seen there for many years. It so happens that I am able to record a more recent capture of another specimen at the same place. On the 22nd of June last, a friend of mine, whilst walking at Flamborough Head, fell in with a man who was returning from sea-fowl shooting, and purchased from him a fine specimen of the bridled guillemot, which he had shot. It appears to be known to the sea-fowlers by the name of "silver-eyed scout," and is admitted by them to be a scarce bird. My friend, knowing the interest I take in everything relating to British birds, packed up the specimen and forwarded it to me. It certainly proved to be a bridled guillemot, but I must confess that I feel very doubtful whether the bird so called is really a distinct species from Uria troile. A variety it certainly is, but I think something more than the white line round the eye is necessary to constitute it a species. At some future time I may perhaps trouble you with a few remarks upon this subject.—*J. Edmund Harting; Kingsbury, Middlesex, August* 5, 1864.

Description of the Eggs and Larvæ of Chortobius Davus.—For the last three or four years I have felt very anxious to obtain larvæ of this species, and this season my efforts have been crowned with complete success. On the 12th of July I put a female of this species into a pill-box, and the next day she deposited eleven eggs, which hatched on the 25th of the same month. The eggs are barrel-shaped and ribbed: when first laid they are of a beautiful green colour, but after a day or two they become marbled all over with brown. The larvæ, when first hatched, are of a dull flesh-colour, with five longitudinal reddish brown stripes, two on each side, and one down the back. When I found my larvæ crawling about in the pill-box I went down to Hatfield Moors for such plants as I could find in the haunts of this butterfly, although I always believed the beak rush (*Rhyncospora alba*) to be its food-plant, on which my larvæ are now feeding and doing well. I have since been to the Moors and found more larvæ feeding upon this plant, which seems to be their only food. They feed exposed by day. The larvæ are now about a quarter of an inch in length, of a dull green colour, with the five longitudinal stripes pale reddish brown. Head brown.—*Samuel Hudson; Epworth, Bawtry, August* 14, 1864.

Description of additional Varieties of the Larva of Eupithecia fraxinata of Crewe. During the past spring I was fortunate enough to get a small batch of fertile eggs of Eupithecia fraxinata from a pair of moths bred in confinement. Amongst the larvæ reared therefrom were some very beautiful varieties, the following description of which may perhaps interest the readers of the 'Zoologist.' I am happy to say that my friend Mr. Buckler has, with his usual skill, executed some most life-like coloured drawings.

Var. 1.—Ground colour deep velvety green. Central dorsal line wanting. Subdorsal lines represented by a series of pale yellowish white spots. Spiracular line yellowish white. On the centre of each segment, between the subdorsal spots and spiracular line, a rather large purple blotch. Belly whitish green, with a central dark green line.

Var. 2.—Ground colour dull reddish purple. Central dorsal line deep dusky purple, enlarged into an arrow-shaped blotch at the segmental divisions. Subdorsal lines dull orange, much broken. Spiracular line bright yellow, orange in the centre, spotted with purple at the segmental divisions, and bordered broadly on the lower side with dull purple. Anal tip of central dorsal line reddish. Belly greenish or yellowish, with a central, narrow, purple line.

Var. 3.—Ground colour pale yellowish olive. Belly paler than rest of the body. Central dorsal line deep purplish red, enlarged at the centre of the segmental divisions, much paler between, very dark on the capital and anal segments. Subdorsal lines dull yellow, purple at the centre of the segmental divisions. Spiracular line yellow, blotched with purple at the centre of the segmental divisions.

Var. 4.—Uniform bright velvety green. Central dorsal and subdorsal lines purple, the former very faint, the latter only appearing in detached spots at the centre of the segmental divisions. Spiracular line pale yellow, blotched on the upper side with purple at the centre of the segmental divisions. Centre of belly whitish or yellowish, with a slender central green line.—*H. Harpur Crewe; The Rectory, Drayton-Beauchamp, Tring, August* 17, 1864.

Notes on the Food-plant of Eupithecia pulchellata, and Description of the Larva and Pupa.—I have great pleasure in at last sending to the 'Zoologist' descriptions of this interesting and hitherto unknown and undescribed larva. The merit of its discovery is due to my excellent and indefatigable friends Mr. Hellins and Mr. Doubleday. The former gentleman, together with myself, has for the last two years been vainly endeavouring to find a food-plant for the larva. The eggs which were sent us hatched freely, but though we supplied the young larvæ with every likely flower we could think of, not one would they touch, and all perished miserably from starvation. This summer Mr. Hellins again succeeded in obtaining fertile eggs. Mr. Doubleday, having observed that Hübner had figured what he called three varieties of the larva of E. linariata upon the flowers of Digitalis lutea, suggested to Mr. Hellins that he should try his young larvæ with the flowers of our common English foxglove (*Digitalis purpurea*, L.). He did so, and found that they fed freely upon it. He immediately communicated this fact to his entomological friends, and the result is that the larva has been found in some plenty in various parts of England. I found about thirty in less than an hour in a wood in this neighbourhood. Some relatives of mine have taken it in numbers at Warstone, near Leck, Staffordshire. Mr. Greene has taken it freely at Cubley, and Mr. George Bates at Breadsall Moor, near Derby, and Mr. Batty has met with it near Sheffield. It feeds, as I said before, on the flowers of Digitalis purpurea. It spins the lip of the flower together and eats the stamens, and occasionally the unripe seeds and seed capsule. Those flowers which contain a larva appear to remain on the stem after the others have dropped to the ground. It is not at all hard to find. It is rather a variable larva. I append descriptions of those varieties which have come under my notice. Hübner would seem to have found this larva and to have confounded it with the larva of E. linariata, from which, however, it is very distinct.

Var. 1.—Ground colour dull yellowish green. Central dorsal line broad, continuous, dull dingy purple. Subdorsal line dull dingy purple, narrow, interrupted on the anal segments. Spiracular line narrow, broken, dingy purple. Head brownish, marked with lines or spots of a deeper shade. Belly whitish green, with a whitish central line. Whole body strewed thinly with whitish hairs, and occasionally suffused and clouded with dull dingy purple. In shape it resembles the larva of E. linariata, in markings that of E. centaureata.

Var. 2.—Ground colour dull yellowish or whitish green. Central dorsal line dusky green. Subdorsal lines dusky green. Segmental divisions yellowish. Spiracular line very narrow and faint, dull green. Belly whitish, without lines or markings.

Var. 3.—Ground colour pale primrose, slightly suffused with green. Central dorsal line dull faint green, nearly evanescent on the posterior segments. Subdorsal lines dull faint green, much broken, having more the appearance of detached spots. Spiracular line very faint, pale yellow. Belly whitish.

Var. 4.—Ground colour bright yellowish green. Central dorsal line pale olive, rather broad. Subdorsal lines pale olive, narrow. Spaces between central dorsal and subdorsal lines bright yellow. Spiracular line dusky green, faint and broken. Belly sea-green. The larva is full-fed from the beginning of July to the beginning of August. I am happy to say that my friend Mr. Buckler, of Emsworth has, with his usual skill, taken most life-like drawings of all the varieties. Pupa enclosed in a slight earthen cocoon. Thorax and wing-cases transparent yellowish green. Abdomen reddish yellow. Abdominal divisions and tip dark red.—*H. Harpur Crewe.*

Description of the Larva and Pupa of Eupithecia lariciata of Frey.—Var. 1.—Ground colour bright grass-green, somewhat darker on the centre of the back. Central dorsal line dark green. Anal tip of central dorsal line reddish. Subdorsal lines wanting, or so faint as to be scarcely visible. Spiracular line whitish or pale straw-colour. Segmental divisions yellowish. Belly whitish, with a dark green central line. A long, slender larva, tapering towards the head. Resembles in appearance the larva of E. fraxinata of Crewe.

Var. 2.—Ground colour yellowish red or reddish buff. Central dorsal line brownish olive. Subdorsal lines brownish olive, occasionally very faint. Spiracular line pale greenish yellow. Anal tip of central dorsal line reddish. Belly whitish, with a dusky central and two broad lateral lines. Strongly resembles the larva of E. indigata of Hübner. Feeds on larch and spruce fir. Full-fed the end of July. Pupa enclosed in a slight earthen cocoon. Rather long and slender. Thorax yellowish olive. Wing-cases deep green. Abdomen yellowish green, tinged with red. Abdominal divisions and tip red. This insect, which has only lately been ascertained to be British, was first taken, some three three years since, in Kent, by Mr. Eedle. During the present season Mr. Edward Hopley and Dr. Gill have again taken it in Surrey. The former gentleman most kindly sent me a small batch of impregnated eggs, from which I reared about ten larvæ. From these the foregoing descriptions were taken. The perfect insect appears at the end of May and beginning of June.—*Id.*

Immense Swarms of Syrphus Pyrastri.—Enclosed are some species of Diptera that are swarming here in countless thousands. My attention was first drawn to them on Sunday, the 14th inst., the walls of my house being literally covered with them. Yesterday they passed over this place in an eastward direction in large masses. At the Rev. C. Pritchard's and other places they were seen passing continuously for six hours. One old lady in this place, the owner of a fine orchard, declares it to be a blight upon her apples, as they completely covered her trees yesterday in their eastward migration. Every house in this place is infested with them. No doubt you will receive notices of their occurrence in other places. I certainly think such an unusual occurrence worth recording.—*H. Rogers; Freshwater, Isle of Wight, August* 16, 1864.

Postscript.—Since writing the foregoing communication I have gained the following additional particulars. I went to Freshwater Gate yesterday: there the dead bodies of these flies formed a line on the shore and under the cliffs more than four miles in length, *viz.*, from the Needles to the Monument. Colwell Shore presented the same appearance, and millions were still flying about there, to the annoyance and discomfort of our lady visitors, many of whom seemed quite alarmed at the unusual occurrence. I then visited Yarmouth Bridge, where men are employed at the present time painting the rails, this being the direction the swarm had taken the day before. For fifty yards the rails were completely covered with flies firmly fixed to the wet paint. There were stragglers to the right and left, but this seems about the width of the main body. If you consider a mass fifty yards wide passing over for six hours, the number seems almost incredible.—*H. Rogers; August* 18, 1864.

[The flies sent are Syrphus Pyrastri. Mr. Rogers is quite right in supposing I should receive similar announcements from other quarters: I have been inundated with correspondence on the subject, generally accompanied with a demand for a remedy for *this destructive pest.* The history of the fly is on this wise: it is sent by an allwise and ever-watchful Providence to keep in check those countless myriads of Aphides which, in dry seasons like the present, cover the young shoots and feed on their juices, and which, if unrestrained, would desolate the earth. The fly lays its eggs among a colony of Aphides, and the grub, on emergence, finds itself surrounded by its natural food: it slays right and left, and devours the slain. It is, indeed, one of the greatest benefactors to man, who, as usual, mistakes a friend for an enemy, and, as in the instance of our small birds, does all he can to destroy the remedy provided by the Almighty against an unquestionable evil.—*Edward Newman*].

Proceedings of Societies.

ENTOMOLOGICAL SOCIETY.

August 1, 1864.—The Rev. HAMLET CLARK, V.P., in the Chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'Memorias de la Real Academia de Ciencias de Madrid,' 1a Ser. Tom. 1e, par. 2a; 2a Ser. Tom. 1e, par. 3a, Tom. 2e, par. 1a; presented by the Academy. 'Schriften der Königl. Physikalisch-ökonomischen Gesellschaft zu Königsberg,' vol. 4, parts 1 and 2; by the Society. 'Bulletin de la Société Imperiale des Naturalistes de Moscou,' 1863, Nos. 1 and 2; by the Society. 'Transactions of the Zoological Society of London,' Vol. v. part 3; 'Proceedings of the Zoological Society of London,' 1863, parts 1—3; by the Society. 'Proceedings of the Royal Society,' Vol. xiii. No. 65; by the Society. 'The Zoologist' for August; by the Editor. 'The Entomologist,' Vol. ii. No. 4; by the Editor. 'The Entomologist's Monthly Magazine,' No. 3; by the Editors. 'The Reader' for July; by the Editor. 'The Journal of the Society of Arts' for July; by the Society. 'British Moths and their Transformations,' by H. N. Humphreys and J. O. Westwood; 'Essai Monographique sur la Tribu des Psychides,' par T. Bruand; 'The Lepidopterist's Calendar,' by Joseph Merrin; 'La Flore des Insectophiles,' par Jaques Brez; 'Catalogue Synonymique des Coléoptères d'Europe et d'Algerie,' par J. Gaubil; 'Genera et Index Methodicus Europæorum Lepidopterorum,' a Doctore J. A. Boisduval; 'Europæorum Micro-Lepidopterorum Index Methodicus,' par. A. Guenée; 'Du Tineen und Pterophoren der Schweiz,' von Prof. Frey; 'Letters of Rusticus;' 'Wahre Parthenogenesis bei Schmetterlingen und Bienen,' von C. T. E. von Siebold; 'On a true Parthenogenesis in Moths and Bees,' by C. T. E. von Siebold, translated by W. S. Dallas; presented by J. W. Dunning.

The following addition, by purchase, was also announced:—'Bericht über die wissenschaftlichen Leistungen ein Gebiete du Entomologie,' 1838—1847, von Dr. W. F. Erichson.

Exhibitions, &c.

Mr. Bond exhibited Gelechia pinguinella, a species new to Britain, found on the trunks of poplars near London; and a specimen of Nyctegretes Achatinella, one of the rarer British Phycidæ, captured by Mr. Thomas Brown near Yarmouth.

Mr. J. Jenner Weir exhibited an albino variety of Eubolia bipunctaria, caught on the South Downs.

Professor Westwood, in calling attention to the preparation, by Mr. Baker, of Cambridge, of a larva of Zeuzera Æsculi, took occasion to observe that the upholders of the law of priority in nomenclature were bound to restore the name Zenzera in lieu of Zeuzera: Zenzara was the name first given to the insect by Latreille, and it was only by a typographical error that Zeuzera had ever appeared.

Mr. M'Lachlan exhibited a specimen of Libellula striolata, from Montpellier, having the veins at the basal part of the anterior wings covered with specimens of a red species of Acarus.

Prof. Westwood remarked that the Acari had probably taken up their position for the purpose of sucking some fluid matter, which went to show that the wing-veins were not (as had been supposed) mere horny matter, not containing fluid.

Mr. F. Smith doubted whether the Acari had placed themselves on the wing-veins in search of food or suction; humble-bees were often covered with these insects, and 300 or 400 Acari might be found on a single specimen, so that the humble-bee actually fell to the ground through their weight; he thought that the Acari fed on the comb, and crawled upon the body of the humble-bee when within the nest, and so were carried out. The presence of Acari on the dung-beetles (*Geotrupes*) also was notorious.

Mr. Edwin Shepherd referred to the frequent occurrence of Acari on butterflies, and thought they were picked up from the flowers which the butterflies visited.

Prof. Westwood directed attention to the editorial note appended to an article headed "Larval Reproduction in Insects," at p. 56 of 'The Entomologist,' vol. ii.: Mr. Newman there stated as a fact that the larvæ found by Prof. Wagner within the Dipterous larvæ from Kasan were "those of one of the Pteromalidæ which habitually infests the larvæ of Diptera." This might be so, but no grounds for the statement were adduced, and it did not appear that Mr. Newman had had any opportunity of investigating the point. It should be borne in mind that Prof. Wagner was perfectly well aware of "the familiar parasitism of the Ichneumonidæ" before publishing his discovery in Siebold and Kölliker's Zeitschrift, and in fact the course of his observations had been guided by his knowledge of the habits of the Pteromalidæ. At any rate, he (Prof. W.) protested against the dogmatic assertion of the editor of 'The Entomologist,' as tending to shut out from further inquiry a question which, to say the least, was as yet an open one, and of which further investigation was most desirable.

Papers read.

Mr. Baly read a paper entitled "Descriptions of uncharacterized Genera and Species of Phytophaga," in illustration of which the new species were exhibited.

Mr. Hewitson communicated "Descriptions of four new Butterflies" (with drawings),—Helcyra Hemina from East India; Limenitis Labotas, from Menado; S. Ligyes, from Northern India; and Laogona Lilæa, from East India.

The Rev. H. Clark read "Notes on the Genus Hydaticus of Leach, with descriptions of new Species." The new species were eight in number, *viz*. Hydaticus Bakewellii, from Moreton Bay; H. Adamsii and H. aruspex, from China; H. verecundus (from South America and Java?); H. Bowringii, from China and Australia; H. Ussherii, H. paganus and H. matruclis, from the Gold Coast.—*J. W. D.*

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Sucklers.—The Badger: its period of Gestation, *Edward Newman*, 9218. Period of Gestation of the Badger, 9218, 9219, 9220, 9223. Note on the Byblus-bok, 9223.

Natural-History Notes, principally from Formosa, *Robert Swinhoe*, 9224.

Birds.—Ornithological Notes from Shetland, *Henry L. Saxby, M.D.*, 9230. Remarks on the Birds seen during a Visit to Flamborough, in the last Fortnight of July, 1864, *John Cordeaux*, 9243. An additional List of British Birds found in South Africa, *J. H. Gurney, M.P.*, 9247. The Fieldfare in Leicestershire in July, *Joseph H. Ellis*, 9248. Wood Wren and Chiffchaff in the North of Scotland, *C. R. Alston*, 9248. Lesser Redpole's Nests near Birmingham, *T. Beaven Rake*, 9248. Has the Great Black Woodpecker occurred in Norfolk? *Henry Stevenson*, 9248. Black Swan near Beverley, *W. W. Boulton*, 9251. The Bridled Guillemot at Flamborough Head, *J. Edmund Harting, F.Z.S.*, 9251.

Insects.—Description of the Eggs and Larvæ of Chortobius Davus, *Samuel Hudson*, 9252. Description of additional Varieties of the Larvæ of Eupithecia fraxinata of Crewe; Notes on the Food-plant of Eupithecia pulchellata, and Description of the Larva and Pupa; Description of the Larva and Pupa of Eupithecia lariciata of Frey, *Rev. H. Harpur Crewe, M.A.*, 9252—9254. Immense Swarms of Syrphus Pyrastri, *H. Rogers*, 9254.

Proceedings of Societies.—Entomological Society, 9255.

TO CORRESPONDENTS.

My readers will, I am sure, be gratified to see what progress has been made in the publication of arrears. Most of the following papers are recently received, and few, if any, of them were in hand on the 1st of the present month:—

Insects.—Life-Histories of Sawflies, *J. W. May.* Scarcity and Abundance of Wasps, *Col. Newman.* Swallow's Nest and Wasps' Nest in proximity, *G. Maw.* Life-History of the Tusseh Silkworm, *Capt. Hobson.*

Birds.—Redthroated Diver, Manx Shearwater, Common Swift, and Little Crake, *W. W. Boulton.* Mountain Linnet, *J. Cordeaux.* Ruddy Shieldrake and Spotted Sandpiper, *Samuel Hudson.* Arab Falconry.

Reptiles.—Toad found forty feet under-ground, *P. H. Gosse.*

Fishes.—The Herring, *Dr. Moses.*

EDWARD NEWMAN.

This day is published, price Sixpence, No. 5 of

THE ENTOMOLOGIST: it contains an Analytical Notice of Mr. Wollaston's 'Catalogue of the Coleopterous Insects of the Canaries in the Collection of the British Museum.' Description of the Larva of Pieris Napi, by Edward Newman. Descriptions of the Larvæ of Tortrix viburnana, Peronea caledoniana and Argyresthia nitidella, by John Peers. Entomological Periodicals. Entomological Notes, Queries, Captures and Duplicates.

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